

Abstract

Elastomers are formed from castor oil and/or ricinoleic acid estolides and a polyester formed from an epoxidized vegetable oil such as ESO and a polycarboxylic acid such as sebacic acid, optionally in the presence of a peroxide initiator, or include crosslinked reaction products derived from ricinoleic acid or castor oil estolides, epoxy group-containing compounds such as epoxy resins and/or epoxidized vegetable oil, epoxy hardeners such as polyamine and polycarboxylic acid hardeners, thermally activated free radical initiators such as peroxides, and optionally but preferably include fillers such as limestone or wood flour.. The elastomers can be prepared using a two-step, solvent-less procedure at elevated or ambient temperatures. These predominantly “all-natural” elastomers have physical properties comparable to conventional petroleum-based elastomers and composites and exhibit good flexibility, resiliency, abrasion resistance and inertness to hydrolysis. The resulting elastomers display good mechanical strength and resiliency, are resistant to abrasion and hydrolysis, and can be processed into sheet materials, which makes them attractive as floor covering components.
